

This application is a continuation of U.S. Patent Application Serial No. 09/845,535, filed April 30, 2001, which is a continuation of U.S. Patent Application Serial No. 09/201,071, filed November 30, 1998, now issued Patent 6,235,019, which is a continuation-in-part of U.S. Patent Application Serial No. 08/893,825, filed July 11, 1997, now issued Patent No. 5,899,899, which is a continuation-in-part of U.S. Patent Application Serial No. 08/807,382, filed February 27, 1997, now issued Patent No. 5,899,898.

IN THE CLAIMS

Claims 1-23. (CANCELLED).

Claim 24. (New) A medical device, comprising:

an elongate member having a longitudinal axis and a thermally-transmissive region having at least one substantially rigid bellows-shaped thermally transmissive element.

Claim 25. (New) The medical device of claim 24,

wherein the at least one thermally transmissive element defines a sawtooth-shaped cylindrical outer surface axisymmetric about the longitudinal axis, the cylindrical surface defining a cross-section parallel to and coincident with the longitudinal axis, the cross-section having sawtooth edges that are parallel to the longitudinal axis.

Claim 26. (New) The medical device of claim 24,

wherein the at least one thermally transmissive element includes a plurality of consecutive annular segments arranged along the longitudinal axis and having outer surfaces with alternating slopes relative to the longitudinal axis.

Claim 27. (New) The medical device of claim 26,

wherein the outer surfaces of the plurality of consecutive annular segments define a sawtooth-shaped cylindrical surface axisymmetric about the longitudinal axis, the cylindrical surface defining a cross-section parallel to and coincident with the longitudinal axis, the cross-section having sawtooth edges that are parallel to the longitudinal axis.

Claim 28. (New) The medical device of claim 24,

wherein the at least one rigid bellows-shaped thermally transmissive element is elastically deformable.

Claim 29. (New) The medical device of claim 28,

wherein the elongate member defines a longitudinal axis, and the at least one rigid bellows-shaped thermally transmissive element is only substantially elastically deflectable in a direction perpendicular to the longitudinal axis.

Claim 30. (New) The medical device of claim 24, further comprising:

an outer surface of the elongate member

an outer surface of the at least one rigid bellows-shaped thermally transmissive element which coincides with at least a portion of the outer surface of the elongate member.

Claim 31. (New) The medical device of claim 30,

wherein the outer surface of the least one rigid bellows-shaped thermally transmissive element is an undulating surface.

Claim 32. (New) The medical device of claim 24,

wherein the at least one rigid bellows-shaped thermally transmissive element includes at least two rigid bellows-shaped thermally transmissive elements arranged consecutively along the longitudinal axis.

Claim 33. (New) The medical device of claim 32,
wherein the at least two bellows-shaped thermally transmissive elements are separated by flexible segments arranged along the longitudinal axis.

Claim 34. (New) The medical device of claim 24,
wherein the at least one substantially rigid bellows-shaped thermally transmissive element retains enough stiffness to retain a selected shape after bending.

Claim 34. (New) A medical device for cooling tissue, comprising:
an elongate member having a distal end portion having a bellows-shaped, thermally-transmissive region,
a fluid path disposed through the elongate member and the distal end portion,
a flow of non-aqueous cryogenic fluid flowing into the distal end portion proximate the thermally-transmissive region.

Claim 35. (New) The medical device of claim 34,
wherein the tissue is cooled solely by the flow of cryogenic fluid proximate the thermally-transmissive region.

Claim 36. (New) A tissue ablation device, comprising
an elongate member having a distal ablation segment having a bellows-shaped, thermally-transmissive region adapted to be disposed proximate the tissue,
a fluid path disposed through the elongate member and the distal ablation segment,
a flow of cryogenic fluid flowing into the distal ablation segment proximate the thermally-transmissive region.

Claim 37. (New) The medical device of claim 36,
wherein the tissue is ablated solely by the flow of cryogenic fluid proximate the thermally-transmissive region.

Claim 38. (New) The medical device of claim 36,
wherein the distal ablation segment includes only the bellows-shaped thermally-transmissive region.